REFERENCE 36

For: Mr. Harry Amend, Superintendent/Mr. Gregg Mathews, Supervisor
Freeman School District # 358

UNDERGROUND STORAGE TANK SITE ASSESSMENT/SITE CHARACTERIZATION, REMOVAL OF PETROLEUM CONTAMINATED SOIL (PCS) & DRILLING OF ONE MONITOR WELL FREEMAN HIGH SCHOOL, FREEMAN, WASHINGTON

By: Jackie E. Stephens, Geologist
Blue Ridge Associates, Inc. 08-27-95

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FREEMAN, WASHINGTON

UNDERGROUND STORAGE TANK
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&
DRILLING OF ONE MONITOR WELL

1.0 INTRODUCTION

Blue Ridge Associates, Inc. (Blue Ridge) was retained by Mr. Greg Matthews, Supervisor of Ancillary Services, of Freeman School District #358 to perform an Underground Storage Tank (UST) **SITE ASSESSMENT** at the Freeman High School, Freeman, Washington (see Figure 1: area location and Figure 2: site location). This report is submitted to satisfy the scope of work of the consultant/client contract for an **UST SITE ASSESSMENT REPORT** and to meet the requirements of the Washington Department of Ecology (WDOE).

Chapter 173-360 WAC states that the purpose of a **SITE ASSESSMENT REPORT** is "*to investigate an UST site at the time of closure or change-in-service to determine if a release has occurred*". One (1) underground storage tank (UST) was permanently removed from the subject site. An **UST SITE ASSESSMENT** is required in this situation.

The **SITE ASSESSMENT** consists of a site inspection, site sampling upon tank removal, submitting of the samples for analysis, review and interpretation of the analytical results, review of past activities on the site and its environs, and communication with appropriate governmental agencies. Based on the information obtained, the UST site is either determined to be free of contamination, or it is reported as a leaking UST (LUST) site. If petroleum based contamination is found at the site a **SITE CHARACTERIZATION** report is required. A **SITE CHARACTERIZATION** consists of the information required for a **STATUS REPORT** plus the following:

1) A site conditions map indicating approximate boundaries of the property, all areas where hazardous substances are known or suspected to be located, and sampling locations. This map may consist of a sketch of the site at a scale sufficient to illustrate this information;

2) Available data regarding surrounding populations, surface and ground water quality, use and approximate location of wells potentially affected by the release, subsurface soil conditions, depth to groundwater, direction of groundwater flow, proximity to and potential for affecting surface water, locations of sewers and other potential conduits for vapor or free-product migration, surrounding land use, and proximity to sensitive environments;

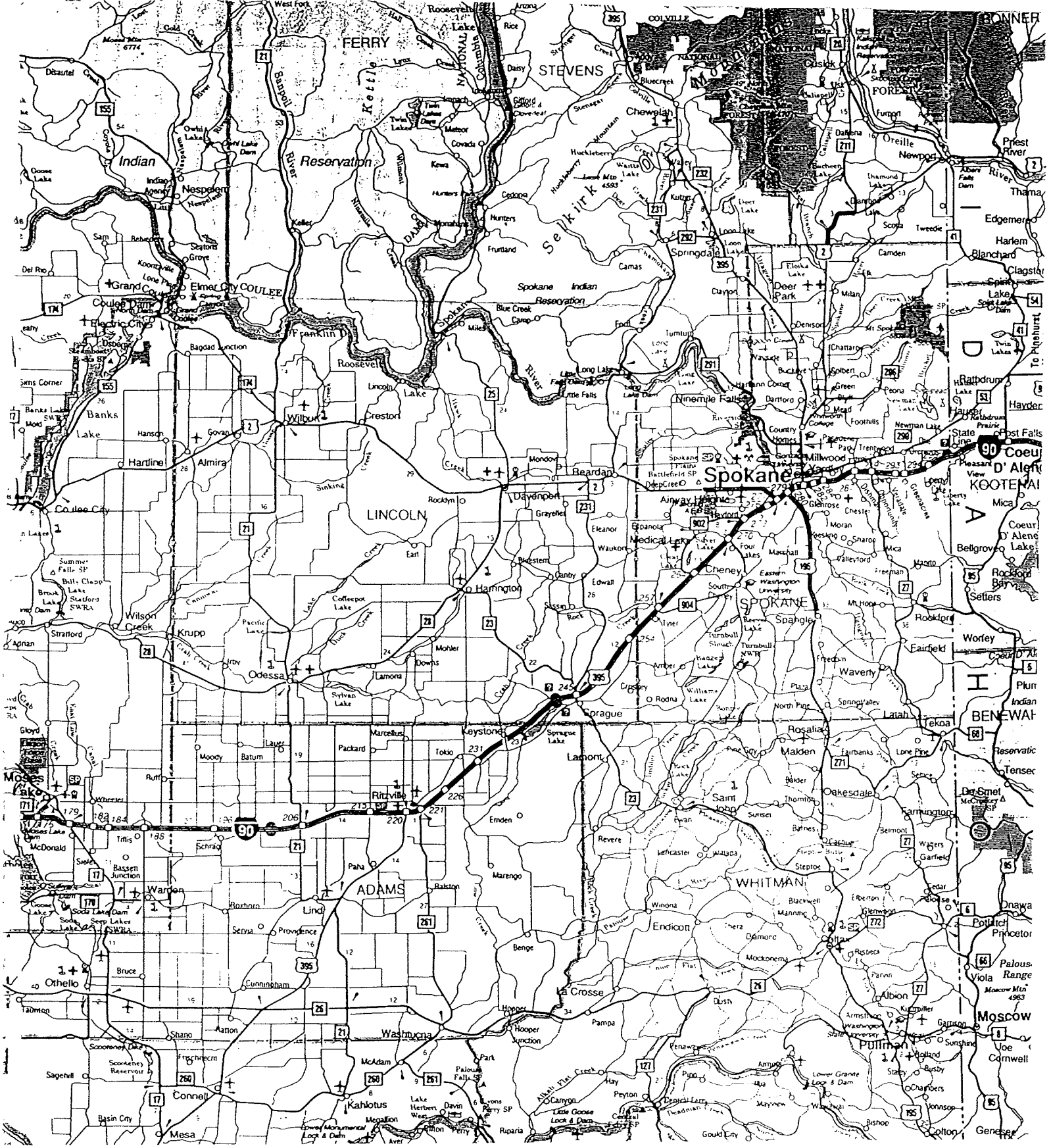


Figure 1: Area Location of Freeman, Washington.

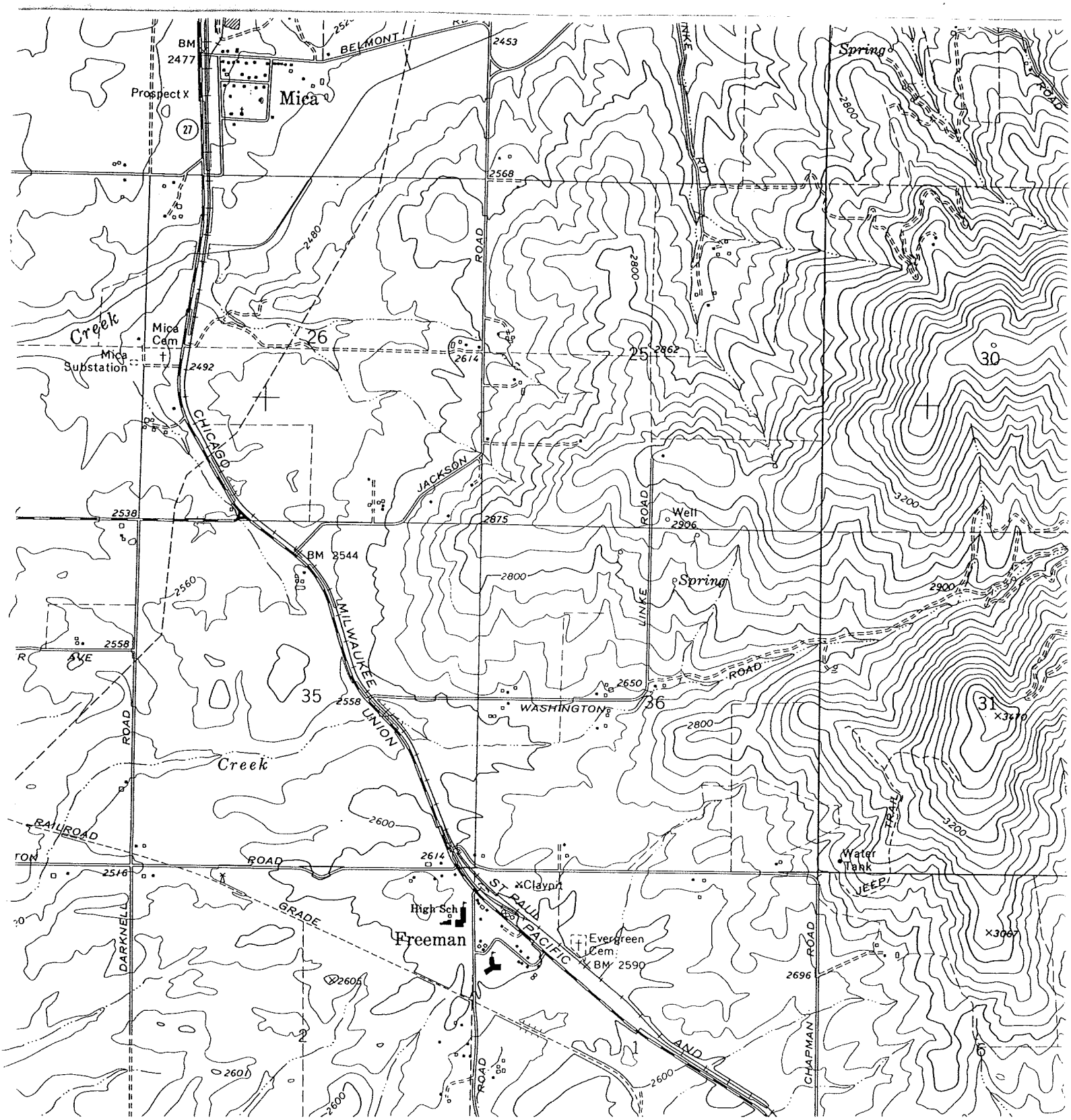


Figure 2: Site Location of Freeman High School, Freeman, Washington

3) Results of tests of the free-product investigation required under subsection (3)(a)(iii) and (iv) of WAC 173-340-450 of the Model Toxics Control Act.

4) Results of the free-product investigation required under subsection (3)(a)(v) of WAC 173-340-450 of the Model Toxics Control Act.

5) Results of all completed site investigations, interim actions and cleanup actions and a description of any remaining investigations, cleanup actions and compliance monitoring which are planned or underway; and

6) Information on the free-product removal efforts at sites where investigations indicate free-product is present. This shall include, at a minimum, the following information:

   a) Name of person responsible for implementing the free-product removal measures;

   b) The estimated quantity, type, and thickness of free-product observed or measured in wells, boreholes and excavations;

   c) The type of free-product recovery system used;

   d) The location of any on-site or off-site discharge during the recovery operation;

   e) The type of treatment applied to, and the effluent quality expected from, any discharge;

   f) The steps taken and planned to obtain necessary permits for any discharge;

   g) Disposition of recovered free-product; and

7) Any other information required by the department.

2.0 SCOPE OF WORK

The scope of work performed for this assessment is intended to meet the requirements for an **UST SITE ASSESSMENT/SITE CHARACTERIZATION REPORT**. Considering petroleum contaminated soil was found, a **SITE CHARACTERIZATION** was needed. The following discussion details the work performed during the course of this site assessment. Blue Ridge Associates, Inc. was also retained to supervise the **UST DECOMMISSIONING**. The decommissioning was performed by Jackie E. Stephens, Geologist, of Blue Ridge Associates, Inc. The subject tanks were excavated and removed from the site under the supervision of Jackie E. Stephens, Geologist, of Blue Ridge Associates, Inc.

Thirty-seven (36.98) tons of Petroleum contaminated soil was removed and transported to the Graham Road Landfill. Clean backfill was placed in the excavation and a water monitor well was drilled and completed. The monitor well was located about five feet (5') south of the pit.

2.1 Site Inspection Information

The on-site site assessment at the Freeman High School was conducted on June 14, 1995 by Jackie E. Stephens, Geologist, of Blue Ridge Associates, Inc. Blue Ridge has a WDOE Provider's License number S001534, while Jackie E. Stephens is a Registered Site Assessor, having passed the International Fire Code Institute (IFCI) Washington UST Site Assessment examination (ASI-ID-32-US-32000142. Jackie E. Stephens, also, has an Underground Storage Tank Decommissioning Certificate (#75113). One (1) UST were removed from the subject site. The WDOE site number for the Freeman School site is 005314.

The tank decommissioning was performed by Jackie E. Stephens, of Blue Ridge Associates, Inc. The excavating was conducted by B&G Contracting on June 14th. The UST was removed on June 14th, with the UST data shown in the following table:

Table 1: Underground Storage Tank Data

Tank Number	Capacity	Substance
1	2,000	unleaded gasoline

The UST (75.5" x 104") was located along the east side of the Warehouse Maintenance Building at Freeman High School in Freeman, Washington. The unleaded tank long-axis was oriented north/south (see Figure 3). The UST was in good condition when removed, and was transported to Dickson Steel, in Spokane, Washington for legal disposal (see Appendix VII).

2.2 Site History

The site where the UST was located is Freeman High School, which has been a high school for over 20 years. The site before becoming a schoolhouse facility was agricultural/residential.

2.3 Review of Area and Location

The site is located within Spokane County, in the city of Freeman, Washington. The elevation is approximately 2,600 feet above mean sea level.

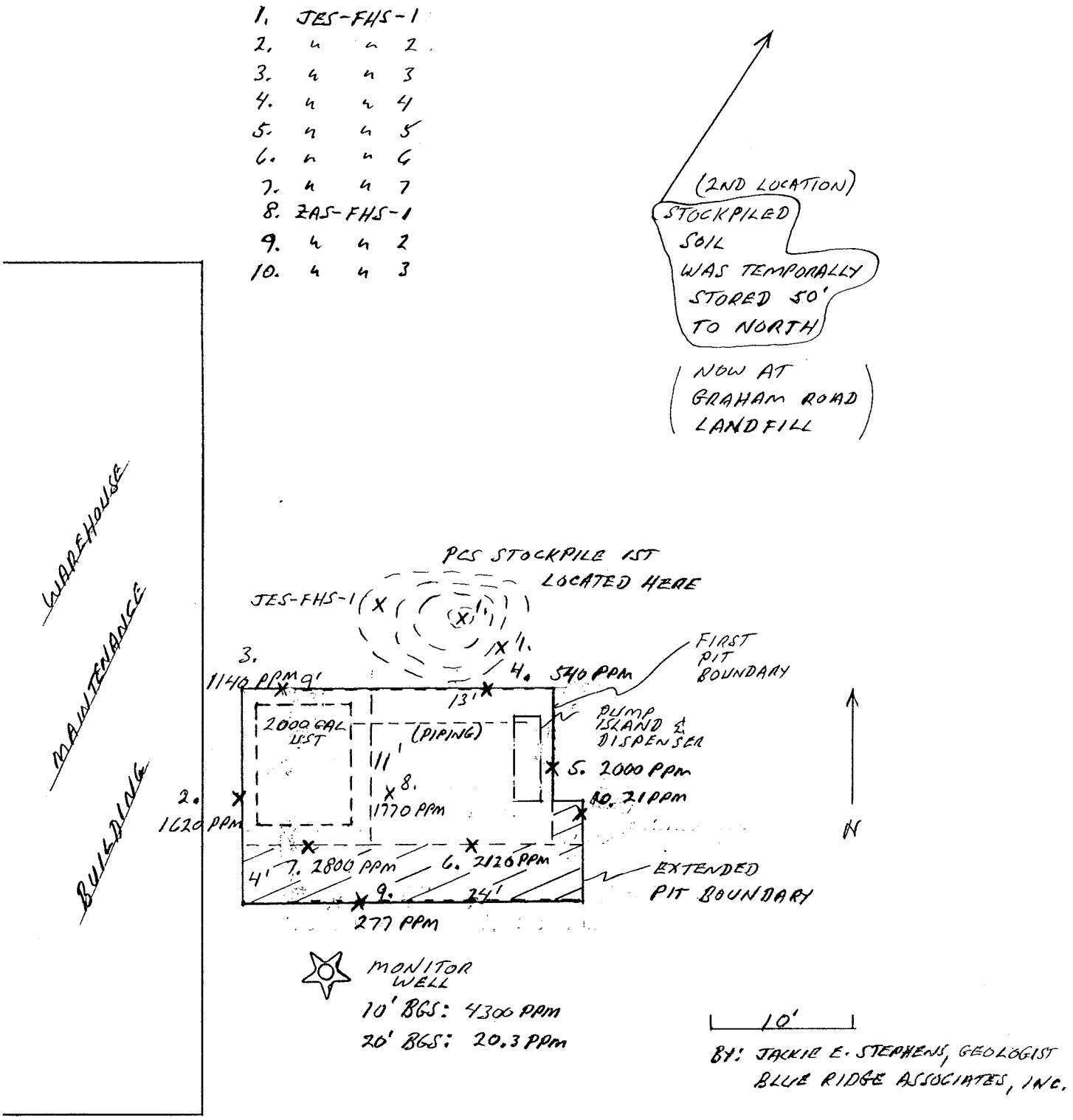


Figure 3: Site plan of 2,000 gallon unleaded gasoline UST

2.3.1 Surrounding Properties

The High School is at the north end of Freeman, Washington. There is a country convenience store contiguous to the subject-property's northern boundary. The High School and Freeman are surrounded by farmlands which have wheat and other grain crops.

2.3.2 Geology and Hydrology

The site is underlain by PreCambrian schist and gneiss, and Columbia River Tertiary basalts. The country rock has broken down locally to silts and clays, with occasional pebbles. The tight silts and clays are holding perched water near the surface, at the site.

2.3.3 Land Use Data

The site from where the tank was removed is the Freeman High School located on the school grounds between the shop maintenance and the high school buildings. The subject-site has either been school grounds or farmland, in the past.

3.0 SITE ASSESSMENT FINDINGS

The following narrative discusses the findings of the **SITE ASSESSMENT/SITE CHARACTERIZATION REPORT**. Photographs of the subject site are included in the Appendix VIII of this report.

3.1 Site Description

The UST was located four (4) feet to the east of the shop maintenance building. The 2,000 gallon UST was beneath a thick (8" to 10") concrete slab, which was heavily reinforced with rebar. A dispenser was located under the eastern portion of the concrete slab, and connected by piping under the slab. The surrounding area is a paved parking lot, or covered by buildings.

3.2 Sampling Program

A total of seven (7) soil samples were collected (see Figure 3: Location of samples for 2,000 gallon unleaded gasoline UST) at the site according to Washington Department of Ecology (WDOE) regulations in Guidance for Site Checks and Site Assessments for Underground Storage Tanks: Department of Ecology Underground Storage Tank Program (February 1991 90-52, revised October 1992). Eight (8) additional samples were taken to characterize the site. It was reasoned that the highly contaminated water sample (visually assessed) beneath the UST would not be sampled. It was supposed that a monitor well could later be water-sampled, as required by the WDOE

3.2.1 Description and Procedures

Petroleum contamination was found beneath the 2,000 gallon unleaded gasoline UST.

Number of Samples. Fifteen (15).
Phase I:
Two samples were collected from the first pits two sidewalls (4)
One sample was collected from two sidewalls (2)
One sample was collected from stockpile (1)

Phase II:
Three samples collected from extended pits two sidewalls and pit bottom (3)
Three samples collected from stockpiled PCS (3)

Phase III:
Two Samples collected from Drilling at 10' and 20' bgs (2)

Total 15 soil samples

Type of Samples. Soil. The samples consisted of a tight brown silty clay.

Method of Collection. Hand tools. Gloves were worn to avoid contamination of the samples, and the sampling trowel was cleaned between samples.

Method of Preservation. The samples were immediately placed in 300 ml borosilicate jars and sealed with teflon-lined lids. They were placed in a cooler and ice was added to lower temperature to approximately 4° Centigrade and shipped via Trailways Bus and with a "Chain of Custody" form in accordance with EPA guidelines to:

Analytical Laboratory.

ANATEK Labs
1917 S. Main
Moscow, Idaho 83843
(208) 883-2839

3.2.2 Results

Samples were analyzed for the following:

1) Total Petroleum Hydrocarbons-Gasoline or Diesel (TPH-G or TPH-D)
2) Benzene, toluene, ethylbenzene, and xylene (BTEX)

EPA analysis methods are as follows: Gasoline by WTPH-G; BTEX by EPA 8021. Appendix III is a copy of the lab report.

3.2.3 Discussion

Please refer to the sample analysis appendix (Appendix I) for a complete review of the total contamination values.

Table #2: SOIL SAMPLING ANALYSES AFTER FIRST EXCAVATION by Jackie E. Stephens of Blue Ridge

values in ppm

Sample #	Gasoline	Benzene	Toluene	Ethylbenzene	Xylene	Diesel	Waste Oil
JES-FHS-1	**1,340**	**2.21**	17.30	9.3	**47.26**	<25	<100
JES-FHS-2	**1,620**	0.914	2.672	1.481	9.905	<25	<100
JES-FHS-3	**1,140**	**12.16**	**94.36**	**37.09**	**191.2**	NA	NA
JES-FHS-4	**540**	**3.362**	2.637	2.424	9.446	NA	NA
JES-FHS-5	**2,000**	**6.06**	**45.25**	17.72	**89.26**	NA	NA
JES-FHS-6	**2,120**	**5.22**	**50.92**	**20.56**	**103.62**	NA	NA
JES-FHS-7	**2,800**	**14.36**	**86.46**	**31.81**	**149.67**	NA	NA

TPH Total petroleum hydrocarbons
U Undetected
NA Not analyzed for these analytes
1 Analyzed for TPH-Diesel
2 Analyzed for TPH-Gasoline

Sample values above WDOE action levels are in bold and underlined.

All soil samples returned were above action levels for gasoline. Six benzene, four toluene, three ethlybenzene and five xylene analyses were above action levels set by the WDOE. JES-FHS-1 was also analyzed for the RCRA 8 metals and all were below action levels.

Table #3: SOIL SAMPLING ANALYSES AFTER SECOND EXCAVATION by Zane A. Stephens of Blue Ridge

values in ppm

Sample #	Gasoline	Benzene	Toluene	Ethylbenzene	Xylene	Diesel	Waste Oil
ZAS-FHS-1	**1,770**	**9.80**	18.64	12.83	**64.97**	NA	NA
ZAS-FHS-2	**277**	**0.54**	3.88	3.04	14.36	NA	NA
ZAS-FHS-3	21	0.07	0.07	0.06	0.32	NA	NA
ZAS-FHS-SP1	24	0.01	0.20	0.02	0.72	NA	NA
ZAS-FHS-SP2	78	0.32	0.18	0.07	0.19	NA	NA
ZAS-FHS-SP3	**855**	**1.17**	2.11	0.70	4.32	NA	NA

TPH Total petroleum hydrocarbons
U Undetected
NA Not analyzed for these analytes
1 Analyzed for TPH-Diesel
2 Analyzed for TPH-Gasoline

Sample values above WDOE action levels are in bold and underlined

The pit was further excavated removing additional PCS to the east and south. The above table contains analyses-values returned for the second round of excavating. The location and sample values are also plotted on figure 3.

Table 4: Soil Action Levels set by the Washington Department of Ecology

Analyte	Action Levels
Benzene	00.5 mg/Kg
Ethylbenzene	20.0 mg/Kg
Toluene	40.0 mg/Kg
Xylene	20.0 mg/kg
TPH (gasoline)	100.0 mg/Kg
TPH (diesel)	200.0 mg/Kg
Lead	250.0 mg/Kg

3.3 Site Characterization

Please refer to the site map (Figure 3) for the location of the former UST, buildings, pit, and sample locations and values. Thirty seven (37) tons of Petroleum contaminated soil was removed and legally disposed of at Graham Road Landfill, near Airway Heights, Washington. The 75.5" x 104" UST was laying just 16" below the ground-surface.

3.3.1 Site Characterization Findings

No Leaks were found from the UST or piping, although it is surmised that there has been spills and overfills at the site. Some 37 tons of PCS was removed from the excavation and clean fill dirt was brought in for backfilling. One monitor well was drilled five feet south of the excavation. Two soil samples were taken at 10' and 20' bgs, and are shown in the table below.

Table # 5: Drilling Soil Analysis

Sample #	Gasoline	Benzene	Toluene	Ethylbenzene	Xylene	Diesel	Waste-Oil
ZAS-FHS-1 10'	**4300**	**7.96**	**93.59**	42.66	**226.44**		
ZAS-FHS-2 20'	20.3	**0.87**	0.47	0.35	1.13		

TPH Total petroleum hydrocarbons
U Undetected
NA Not analyzed for these analytes
1 Analyzed for TPH-Diesel
2 Analyzed for TPH-Gasoline
Sample values above WDOE action levels are in bold and underlined

The soil sample analyses from the drilling showed a PCS value of 4,300 ppm gasoline at 10' bgs, but the value at 20' bgs was below WDOE action levels at 20.3 ppm gasoline. Soil sample ZAS-FHS-9 (on south side of extended pit) also showed an above action level value (277 ppm gasoline). The excavation is clean on the east wall, but remains dirty on the north, west and south walls, and the bottom of the pit, having respective of 1140 ppm, 1620 ppm, 277 ppm, and 1770 ppm values.

There is perched groundwater at the subject-property site, which is being pumped to prevent flooding. The direction of flow of this groundwater is unkown, but the areas general drainage is southerly. Consequentially the one monitor well was placed to the south of the UST-excavation. Upon drilling, it had no water, but it should produce water soon.

Table 6: Pertinent Model Toxics Control Act--Cleanup Regulations

(1) WAC 173-340-350:	State remedial investigation and feasibility study; Section 6 (c) (i), (ii), and (iii)
(2) WAC 173-340-450:	Releases from underground storage tanks; Section (3) (a) (iii)

4.0 CONCLUSIONS AND RECOMMENDATIONS

The SITE ASSESSMENT/SITE CHARACTERIZATION REPORT was written after three phases of work were completed:

1. 1st excavating, sampling, and UST pull,
2. Extended excavating,
3. Removal of 37 tons of PCS to landfill and drilling of one water monitor well, on June 21, 1995.

The report is believed to be a factual, unbiased report based on the investigations and sampling at the Freeman High School in Freeman, Washington.

The 2,000 gallon UST was removed from the site and PCS was removed (down to a perched water at about 8' bgs) from around the tank and temporarily stored on site. The Freeman High School Superintendent, Harry Amend approved of further removal of PCS and an additional tonnage was removed. A total of 37 tons of PCS was temporarily stored at the high school and later removed and disposed of at a regulated landfill.

One monitor well was drilled and completed just to the south of the backfilled excavation. Soil sampling of the monitor well soil at 10' bgs showed gasoline contamination of 4,300 ppm. There was no water in the monitor well at the time of drilling, but it is expected to produce water for sampling. Freeman High School made a decision to limit its cleanup expenditures at this point.

5.0 LIMITATIONS

This report is for the exclusive use of the Freeman School District #358 and the WDOE to assist in the evaluation of potential environmental liability associated with the UST formerly located on the subject property. All work has been performed in accordance with the guidelines of the Washington Department of Ecology. No other warranty, expressed or implied, is made.

The conclusions are based on existing conditions, observations, and data made available by the owner and governmental agencies. Blue Ridge Associates, Inc. accepts no liability for lack of accuracy in data obtained from government agencies. Any representation regarding future generation, storage, handling, or use of hazardous materials, substances, or wastes on this property is outside the scope of this UST site assessment.

Field/Office investigations and report completed by:

Jackie E. Stephens
Geologist

9-27-95
Date

Appendix I

Analytical Results

(FREEMAN H.S.)

June 20, 1995

Blue Ridge Associates, Inc.
N. 9 Post, Suite # 250
Spokane, WA 99201
Attn: Jackie Stephens

Items: Results of analysis for samples received 6/15/95.
Sample Log-in number: **21107**
Project: Freeman High School
Date Sampled: 6/15/95
Report # 95-0620-BRA Page 1 of 2

HCID by WTPH-HCID; Gasoline by WPTH-G; BTEX by EPA 8021 mg/Kg = ppm

	Sample Name	*Matrix*	*Analysis Date*	*Analyte*	*Concentration*
1.	JES-FHS-01	Soil	6/16/95	Gasoline	1,340 mg/Kg
				Benzene	2.21 mg/Kg
				Toluene	17.30 mg/Kg
				Ethylbenzene	9.30 mg/Kg
				Xylene(total)	47.26 mg/Kg
			6/20/95	Gasoline	Detected by HCID
				Diesel	< 25 mg/Kg by HCID
				Waste Oil	< 100 mg/Kg by HCID
2.	JES-FHS-02	Soil	6/16/95	Gasoline	1,620 mg/Kg
				Benzene	0.914 mg/Kg
				Toluene	2.672 mg/Kg
				Ethylbenzene	1.481 mg/Kg
				Xylene(total)	9.905 mg/Kg
			6/20/95	Gasoline	Detected by HCID
				Diesel	< 25 mg/Kg by HCID
				Waste Oil	< 100 mg/Kg by HCID
3.	JES-FHS-03	Soil	6/16/95	Gasoline	1,140 mg/Kg
				Benzene	12.16 mg/Kg
				Toluene	94.36 mg/Kg
				Ethylbenzene	37.09 mg/Kg
				Xylene(total)	191.2 mg/Kg
4.	JES-FHS-04	Soil	6/16/95	Gasoline	540 mg/Kg
				Benzene	3.362 mg/Kg
				Toluene	2.637 mg/Kg
				Ethylbenzene	2.424 mg/Kg
				Xylene(total)	9.446 mg/Kg
5.	JES-FHS-05	Soil	6/16/95	Gasoline	2,000 mg/Kg
				Benzene	6.06 mg/Kg
				Toluene	45.25 mg/Kg
				Ethylbenzene	17.72 mg/Kg
				Xylene(total)	89.26 mg/Kg

95-0620-BRA Page 2 of 2

	Sample Name	*Matrix*	*Analysis Date*	*Analyte*	*Concentration*
6.	JES-FHS-06	Soil	6/16/95	Gasoline	2,120 mg/Kg
				Benzene	5.22 mg/Kg
				Toluene	50.92 mg/Kg
				Ethylbenzene	20.56 mg/Kg
				Xylene(total)	103.62 mg/Kg
7.	JES-FHS-07	Soil	6/16/95	Gasoline	2,800 mg/Kg
				Benzene	14.36 mg/Kg
				Toluene	86.46 mg/Kg
				Ethylbenzene	31.81 mg/Kg
				Xylene(total)	149.67 mg/Kg

Mike Pearson
Laboratory Director

Anatek Labs
1917 S. Main Moscow, ID 83843 (208) 883-BTEX (2839) FAX: (208) 882-9246

July 12, 1995

Blue Ridge Associates, Inc.
N. 9 Post, Suite # 250
Spokane, WA 99201
Attn: Jackie Stephens

Items: Results of analysis for samples received 6/15/95.
Sample Log-in number: **21107**
Project: Freeman High School
Date Sampled: 6/15/95
Report # 95-0712-BRA

Total 8 Metals by EPA 3051 & 6020; mg/Kg = ppm

Sample Name	*Matrix*	*Analysis Date*	*Analyte*	*Concentration*	
JES-FHS-01	Soil	7/11/95	Arsenic	3.8	mg/Kg
			Barium	196	mg/Kg
			Cadmium	< 1.0	mg/Kg
			Chromium	29.9	mg/Kg
			Lead	12.5	mg/Kg
			Mercury	< 0.1	mg/Kg
			Selenium	< 1.0	mg/Kg
			Silver	< 1.0	mg/Kg

Mike Pearson
Laboratory Director

CHAIN OF CUSTODY RECORD

BLUE RIDGE ASSOCIATES, INC.
N 9 POST, SUITE #330
SPOKANE, WA 99201
PHONE # (509) 838-8120
FAX # (509) 456-5956
CONTACT:

SHIP SAMPLES TO:
ANATEK LABS
1917 S. MAIN
MOSCOW, ID 83843
PHONE # (208) 883-2839
FAX # (208) 882-9246

Samplers: (signature)

Project: Fmr. H.C.

SAMPLE ID #	Matrix: Water	Matrix: ~~Soil~~ Solid	Date/Time Sampled		ANALYSIS
STEC-FHS-1		✓	6-15-95	9:15 AM	TPH-G / BTEX / HCID / Pb
4 - 4 2		✓	4	9:30 AM	TPH-G / BTEX / HCID ~~Pb~~ Pb
4 - 4 3		✓	4	9:45 AM	TPHG / BTEX
4 - 4 4		✓	4	10:10 AM	TPHG / BTEX
4 - 4 5		✓	4	10:25 AM	TPHG / BTEX
4 - 4 6		✓	4	10:35 AM	TPHG / BTEX
4 - 4 7		✓	4	10:45 AM	TPHG / BTEX

SPECIFY TURNAROUND: SAME DAY:____ 24 HOUR:____ NORMAL: ✓
NOTE SAME DAY AND 24 HOUR SAMPLES MUST BE VERIFIED WITH THE LAB BEFORE SHIPPING
LABORATORY LOG-IN#:_____ DO YOU WANT RESULTS FAXES: ✓
SPECIAL INSTRUCTIONS/COMMENTS:
ADDITIONAL INFORMATION YOU WOULD LIKE ON YOUR REPORT:

RELINQUISHED BY:	RECEIVED BY:	DATE/TIME
[signature]	[signature] 1000 6/16/95	6-15-95 5:45 PM
RELINQUISHED BY:	RECEIVED BY:	DATE/TIME

21107

Anatek Labs
1917 S. Main Moscow, ID 83843 (208) 883-BTEX (2839) FAX: (208) 882-9246

July 26, 1995

Blue Ridge Associates, Inc.
N. 9 Post, Suite # 250
Spokane, WA 99201
Attn: Zane Stephens

Items: Results of analysis for samples received 7/25/95.
Sample Log-in number: **21223**
Project: Freeman High School
Date Sampled: 7/21/95 & 7/23/95
Report # 95-0726B-BRA Page 1 of 2

BTEX by EPA 8021; Gasoline by WTPH-G; Total 8 by EPA 3051 & 6020; mg/Kg = ppm

Sample Name	*Matrix*	*Analysis Date*	*Analyte*	*Concentration*
8. ZAS-FHS-01 (PIT BOTTOM)	Soil	7/25/95	Gasoline	1,770 mg/Kg
			Benzene	9.80 mg/Kg
			Toluene	18.64 mg/Kg
			Ethylbenzene	12.83 mg/Kg
			Xylene(total)	64.97 mg/Kg
9. ZAS-FHS-02 (PIT SOUTH SIDE)	Soil	7/25/95	Gasoline	277 mg/Kg
			Benzene	0.537 mg/Kg
			Toluene	3.883 mg/Kg
			Ethylbenzene	3.038 mg/Kg
			Xylene(total)	14.357 mg/Kg
10. ZAS-FHS-03 (PIT EAST SIDE)	Soil	7/25/95	Gasoline	21 mg/Kg
			Benzene	0.066 mg/Kg
			Toluene	0.071 mg/Kg
			Ethylbenzene	0.060 mg/Kg
			Xylene(total)	0.318 mg/Kg
ZAS-FHS-SP1	Soil	7/25/95	Gasoline	24 mg/Kg
			Benzene	0.008 mg/Kg
			Toluene	0.020 mg/Kg
			Ethylbenzene	0.023 mg/Kg
			Xylene(total)	0.072 mg/Kg
		7/26/95	Arsenic	3.3 mg/Kg
			Barium	231 mg/Kg
			Cadmium	< 1.0 mg/Kg
			Chromium	28.1 mg/Kg
			Lead	15.3 mg/Kg
			Mercury	< 0.2 mg/Kg
			Selenium	< 2.0 mg/Kg
			Silver	< 1.5 mg/Kg

Anatek Labs
1917 S. Main Moscow, ID 83843 (208) 883-BTEX (2839) FAX: (208) 882-9246

Sample Name	Matrix	Analysis Date	Analyte	Concentration
ZAS-FHS-SP2	Soil	7/25/95	Gasoline	78 mg/Kg
			Benzene	0.323 mg/Kg
			Toluene	0.183 mg/Kg
			Ethylbenzene	0.071 mg/Kg
			Xylene(total)	0.191 mg/Kg
		7/26/95	Arsenic	3.1 mg/Kg
			Barium	168 mg/Kg
			Cadmium	< 1.0 mg/Kg
			Chromium	27.8 mg/Kg
			Lead	16.2 mg/Kg
			Mercury	< 0.2 mg/Kg
			Selenium	< 2.0 mg/Kg
			Silver	< 1.5 mg/Kg
ZAS-FHS-SP3	Soil	7/25/95	Gasoline	855 mg/Kg
			Benzene	1.172 mg/Kg
			Toluene	2.113 mg/Kg
			Ethylbenzene	0.704 mg/Kg
			Xylene(total)	4.317 mg/Kg
		7/26/95	Arsenic	3.7 mg/Kg
			Barium	179 mg/Kg
			Cadmium	< 1.0 mg/Kg
			Chromium	26.4 mg/Kg
			Lead	15.7 mg/Kg
			Mercury	< 0.2 mg/Kg
			Selenium	< 2.0 mg/Kg
			Silver	< 1.5 mg/Kg

Mike Pearson
Laboratory Director

July 21, 1995

Blue Ridge Associates, Inc.
N. 9 Post, Suite # 250
Spokane, WA 99201
Attn: Zane Stephens

Items: Results of analysis for samples received 7/19/95.
Sample Log-in number: **21217**
Project: Freeman High School
Date Sampled. 7/13/95
Report # 95-0721-BRA

Gasoline by WTPH-G; BTEX by EPA 8021; mg/Kg = ppm

Sample Name	*Matrix*	*Analysis Date*	*Analyte*	*Concentration*	
ZAS-FHS-1 (DRILL HOLE 10')	Soil	7/20/95	Gasoline	4,300	mg/Kg
			Benzene	7.96	mg/Kg
			Toluene	93.59	mg/Kg
			Ethylbenzene	42.66	mg/Kg
			Xylene(total)	226.44	mg/Kg
ZAS-FHS-2 (DRILL HOLE 20')	Soil	7/20/95	Gasoline	20.3	mg/Kg
			Benzene	0.871	mg/Kg
			Toluene	0.469	mg/Kg
			Ethylbenzene	0.349	mg/Kg
			Xylene(total)	1.129	mg/Kg

Mike Pearson
Laboratory Director

CHAIN OF CUSTODY RECORD

BLUE RIDGE ASSOCIATES, INC.
N 9 POST, SUITE #330
SPOKANE, WA 99201
PHONE # (509) 838-8120
FAX # (509) 456-5956
CONTACT:

SHIP SAMPLES TO:
ANATEK LABS
1917 S. MAIN
MOSCOW, ID 83843
PHONE # (208) 883-2839
FAX # (208) 882-9246

Samplers: (signature)

Project: [redacted]

SAMPLE ID #	Matrix: Water	Matrix: ~~Solid~~ Soil	Date/Time Sampled		ANALYSIS
2AS-FHS-1		V	7/21	3:45	TPH-G / BTEX
2AS-FHS-2		V	7/21	4:15	TPH-G / BTEX
2AS-FHS-3		V	7/21	4:17	TPH-G / BTEX
2AS-FHS-SP1		V	7/23	4:30	TPH-G / BTEX, RCRA-8
2AS-FHS-SP2		V	7/23	4:32	TPH-G / BTEX, RCRA-8
2AS-FHS-SP3		V	7/23	4:35	TPH-G / BTEX, RCRA-8

SPECIFY TURNAROUND: SAME DAY:____ 24 HOUR:____ NORMAL: V
NOTE SAME DAY AND 24 HOUR SAMPLES MUST BE VERIFIED
WITH THE LAB BEFORE SHIPPING
LABORATORY LOG-IN#:_____ DO YOU WANT RESULTS FAXES: YES
SPECIAL INSTRUCTIONS/COMMENTS: _____
ADDITIONAL INFORMATION YOU WOULD LIKE ON YOUR REPORT:_____

RELINQUISHED BY:	RECEIVED BY:	DATE/TIME
Sam A. Stephens SAM A. STEPHENS	M B.	7-24-95 2:55P.
RELINQUISHED BY:	RECEIVED BY: 900 7/25/95	DATE/TIME

Appendix II

30-Day Notice to Close USTs

WASHINGTON STATE DEPARTMENT OF ECOLOGY

UNDERGROUND STORAGE TANK
30 DAY NOTICE

See back of form for instructions
Please ☑ the appropriate box

☐ Intent to Install ☑ Intent to Close ☐ Both

For Office Use Only
Owner # _____
Site # _____

SITE INFORMATION:

Site ID Number (on invoice or available from Ecology if the tank is registered): 005314

Site/Business Name: FREEMAN SCHOOL DISTRICT # 358 (FREEMAN HIGH SCHOOL)

Site Address: _____ (Street) Owner/Operator Telephone: (509) 993-2782

FREEMAN (City) WA. (State) 99030-9799 (ZIP-Code)

TANK INFORMATION:

This section to be filled out ONLY if tanks are being removed

TANKS TO BE CLOSED

Tank ID	Projected Closure Date	Tank Capacity	Substance Stored	Date tank last used	Is there product in the tank? (yes/no)	If no, date tank was pumped
2-HS	6-12-94	2,000	UNLEADED GASOLINE	1-15-95	NO	1-15-95

TANKS TO BE INSTALLED

This section to be filled out ONLY if tanks are being installed

Tank ID	Approx. Install Date

TANK INSTALLATION TO BE PERFORMED BY (if known):

This section to be filled out ONLY if tanks are being installed

Service Provider: _____ Contact Name: _____

Telephone: (___) _____

Address: _____ (Street) (P.O. Box)

_____ (City) (State) (ZIP-Code)

TANK PERMANENT CLOSURE TO BE PERFORMED BY (if known):

This section to be filled out ONLY if tanks are being removed

Service Provider: BLUE RIDGE ASSOCIATES, INC.

Contact Name: JACKIE E. STEPHENS

Telephone: (509) 838-8120

Address: N. 9 PAST, SUITE 330 (Street)

SPOKANE (City) WA (State) (P.O. Box) 99201 (ZIP-Code)

This form will be returned to this address

UST OWNER/ OPERATOR GREG MATHEWS
FREEMAN SCHOOL

MAILING ADDRESS 15001 SOUTH JACKSON RD. (Street)

ROCKFORD (City), WA. (State) 99030-9799 (ZIP-Code)

Once validated by Ecology, this form serves as your temporary permit for the tanks listed above.

Please type or print information

ECY 020-33

PLEASE READ CAREFULLY

Return this completed form to:

Underground Storage Tank Section
Department of Ecology
P. O. Box 47655
Olympia, WA 98504-7655

INSTRUCTIONS

Check the appropriate box for tank closure, tank installation, or both.

SITE INFORMATION:

Fill in the site information. Be sure to include the site number for the tank closures. Include the contact telephone number so that any problems may be resolved quickly.

TANK INFORMATION:

List the tanks to be installed or closed. Please use tank ID number(s) for the tanks to be closed and assign new tank ID number(s) to the tanks being installed. **Do not use existing numbers from closed tanks.**

TANK INSTALLATION TO BE PERFORMED BY:

List the installation contractor. Firms that provide UST services MUST be licensed by Ecology. Once your completed form is received, Ecology will validate it and return it to you. This validated form is your temporary permit. A temporary permit will allow you to receive product. A new notification form must be submitted within 30 days of installation in order to receive permanent permit(s).

TANK PERMANENT CLOSURE TO BE PERFORMED BY:

List the closure contractor. Firms that provide UST services MUST be licensed by Ecology. Ask to see their license. Once a completed 30 day notice closure form is received, Ecology will place the date received on the form and return a copy to the owner.

Closure may proceed 30 days after the date stamped on the form. A site assessment is required at the time of closure unless contamination is confirmed. Any contamination must be reported within 24 hours to the appropriate Ecology Regional Office.

Please fill in the owner's name and address. **Confirmation of receipt of this form and your temporary permit will be sent to this address.**

Contact your local fire marshal and planning department prior to tank closure to find out about any additional permits that may be required by the county or other local jurisdictions. This may include the need to comply with the State Environmental Policy Act (SEPA) Rules Chapter 197-11 WAC.

Tanks exempt from notification requirements are:

Farm or residential tanks, 1100 gallons or less, used to store motor fuel for personal or farm use only. The fuel must not be for resale or used for business purposes.

Tanks used for storing heating oil that is used on the premises where the tank is located.

Tanks with a capacity of 110 gallons or less.

Equipment or machinery tanks such as hydraulic lifts or electrical equipment tanks.

Emergency overflow tanks, catch basins, or sumps.

For more information call toll free in the state of Washington
1-800-826-7716 or (206) 438-7137

Appendix III

Underground Storage Tank
Permanent Closure and Site Assessment Notice

WASHINGTON STATE DEPARTMENT OF ECOLOGY

UNDERGROUND STORAGE TANK TEMPORARY/PERMANENT CLOSURE and SITE ASSESSMENT NOTICE

See back of form for instructions
Please ☑ the appropriate box(es)
Please type or print information

For Office Use Only
Owner #
Site #

☐ Temporary Tank Closure ☑ Permanent Tank Closure ☐ Change-In-Service ☐ Site Assessment/ Site Check

SITE INFORMATION:

Site ID Number (on invoice or available from Ecology if the tanks are registered): 005314

Site/Business Name: FREEMAN SCHOOL DISTRICT #358 (FREEMAN HIGH SCHOOL)

Site Address: 15021 SOUTH JACKSON ROAD (Street) FREEMAN Telephone: (509) 993-2782

ROCKFORD (City) WA (State) 99030-9799 (ZIP-Code)

TANK INFORMATION:

Tank ID	Closure Date	Tank Capacity	Substance Stored
[redacted] 2-HS	6-14-95	2,000	UNL. GASOLINE

CONTAMINATION PRESENT AT THE TIME OF CLOSURE

☑ Yes ☐ No

☐ Unknown

Check unknown if no obvious contamination was observed and sample results have not yet been received from analytical lab.

UST SYSTEM OWNER/OPERATOR:

UST Owner/Operator: FREEMAN SCHOOL DISTRICT #358

Owners Signature: [signature] Telephone: (509) 993-9799

Address: 15021 SOUTH JACKSON RD (Street) (P.O. Box)

ROCKFORD (City) WA (State) 99030-9799 (ZIP-Code)

TANK CLOSURE/CHANGE-IN-SERVICE PERFORMED BY:

Service Provider: BLUE RIDGE ASSOCIATES, INC License Number: SOO1534

Licensed Supervisor: JACKIE E. STEPHENS Decommissioning License Number: 75113 (IFCI)

Supervisors Signature: [signature]

Jackie E. Stephens
Blue Ridge Associates, Inc.
North 9 Post, Suite 330
Spokane, WA 99201

Address: (Street) (P.O. Box)

(City) (State) (ZIP-Code)

Telephone: (509) 838-8120

SITE CHECK/SITE ASSESSMENT CONDUCTED BY:

Name of Registered Site Assessor: 32-US-32000142 (IFCI)

Telephone: (509) 838-8120

Jackie E. Stephens
Blue Ridge Associates, Inc.
North 9 Post, Suite 330
Spokane, WA 99201

Address: (Street) (P.O. Box)

(City) [signature] (State) (ZIP-Code)

ECY 020-34

Appendix IV

Underground Storage Tanks
Site Check/ Site Assessment Checklist

UNDERGROUND STORAGE TANK
Site Check/Site Assessment Checklist

For Office Use Only	
Owner #	
Site #	

INSTRUCTIONS:

When a release has **not** been confirmed and reported, this Site Check/Site Assessment Checklist must be completed and signed by a person registered with the Department of Ecology. **The results of the site check or site assessment must be included with this checklist.** This form must be submitted to Ecology at the address shown below within 30 days after completion of the site check/site assessment.

SITE INFORMATION: Include the Ecology site ID number if the tanks are registered with Ecology. This number may be found on the tank owner's invoice or tank permit.

TANK INFORMATION: Please list all the tanks for which the site check and site assessment is being conducted. Use the tank ID number if available, and indicate tank capacity and substance stored.

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT: Please check the appropriate item.

CHECKLIST: Please initial each item in the appropriate box.

SITE ASSESSOR INFORMATION: This form must be signed by the registered site assessor who is responsible for conducting the site check/ site assessment.

Underground Storage Tank Section
Department of Ecology
P. O. Box 47655
Olympia, WA 98504-7655

SITE INFORMATION

Site ID Number (on invoice or available from Ecology if the tanks are registered): 005314

Site/Business Name: FREEMAN SCHOOL DISTRICT #358 (FREEMAN HIGH SCHOOL)

Site Address: ——— (Street) Telephone: (509) 993-9799

FREEMAN (City) WA (State) 99030-9799 (ZIP-Code)

TANK INFORMATION

Tank ID No.	Tank Capacity	Substance Stored
#1	2,000	UNL. GASOLINE

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT

Check one:

- ____ Investigate suspected release due to on-site environmental contamination.
- ____ Investigate suspected release due to off-site environmental contamination.
- ____ Extend temporary closure of UST system for more than 12 months.
- ____ UST system undergoing change-in-service.
- ✓ UST system permanently closed-in-place.
- ____ UST system permanently closed with tank removed.
- ____ Abandoned tank containing product.
- ____ Required by Ecology or delegated agency for UST system closed before 12/22/88.
- ____ Other (describe): ———

Appendix V

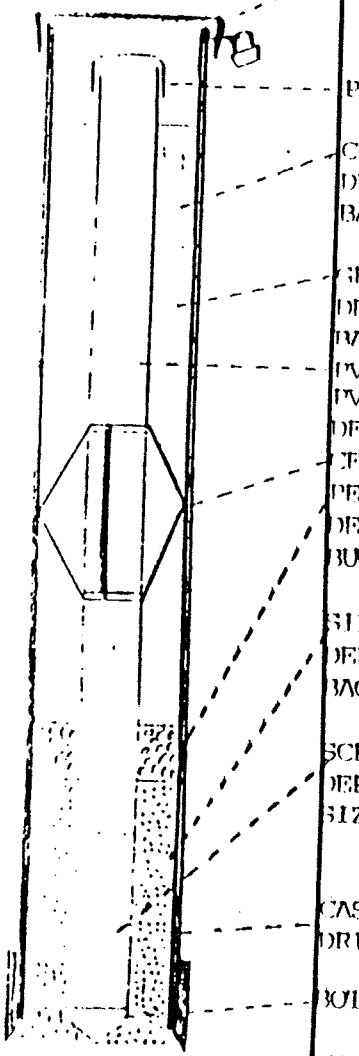
Drill Log

RESOURCE PROTECTION WELL REPORT

PROJECT NAME: Freeman High School
WELL IDENTIFICATION NO.: FHS-1
DRILLING METHOD: 4¼" ID HSA
DRILLER: Bob Elliott
FIRM: ~~Ponderosa Drilling~~
SIGNATURE: R. Elliott
OTHER THAN FIRM: Blue Ridge
REPRESENTATIVE: Zane Stevens

START CARD NO.:
COUNTY: Spokane
LOCATION: NE ¼ NE ¼ Sec 2 Twn 23N R44E
STREET ADDRESS OF WELL:
WATER LEVEL ELEVATION: None
GROUND SURFACE ELEVATION:
INSTALLED: 7/21/95
DEVELOPED:

AS BUILT



WELL DATA

CAP OR VAULT
TYPE: flush
SIZE: 8"
LOCK:
PVC CAP: Yes
~~Expanding~~

CEMENT: ~~quickcrete~~
DEPTH: 0' TO 1.0'
BAGS: ~~1 bag~~

GROUT TYPE:
DEPTH: TO
BAGS:

PVC TYPE: SCH 4
PVC SIZE: 2"
DEPTH: ~~0.0'~~ TO 5'
CENTRALIZERS:

PELLETS SIZE: ~~3/8" hole Plug~~
DEPTH: ~~1.0'~~ TO ~~7.0'~~
BUCKETS: ~~2 bags~~

SILICA SAND:
DEPTH: 7' TO 20.5'
BAGS: 7 bags

SCREEN TYPE: 2" SCH 40
DEPTH: 5' TO 20.5'
SIZE: .01 slot

CASING SIZE:
DRIVE SHOE:

BOTTOM: threaded cap

GUARD POSTS:

MISC:

FORMATION DESCRIPTION

Palouse Clay & fine silt to EOH

Dry hole

EOH 20.5'

5'
10'
15'
20'

SCALE: 1" = _____

PAGE 1 OF 1

Y 050 12 (Rev. 11/89)

Appendix VI

UST Site Safety Plan

UST SITE SAFETY PLAN

SITE NAME: FREEMAN SCHOOL

OWNER'S NAME:

SITE ADDRESS: FREEMAN SCHOOL
FREEMAN, WASHINGTON

SITE SAFETY OFFICER: JACKIE E. STEPHENS

A meeting of all personal involved in the operation is required before beginning any work. The meeting will be a review of the safety procedures as outlined in this plan. These procedures are mandatory. Failure to follow the guidelines outlined below will be deemed sufficient cause for the Site Safety Officer to halt work on the site.

SAFETY PROCEDURES

BEFORE OPERATIONS BEGIN, THE CONTRACTOR WILL:

1. Identify the Site Safety Officer to all personnel that will be required to enter the excavation area
2. Determine the exact nature of the product contained in the UST and note any special precautions required
3. Ban smoking within 50 feet of the tank or pit
4. Rope off the area to both pedestrians and unauthorized motor vehicles
5. Locate and mark all utility lines in the area
6. Ensure that current weather conditions pose no threat (calm wind conditions can lead to buildup of vapors in an excavation)
7. Ensure that a means of contacting emergency services is available
8. Ensure all power tools and equipment to be used near the tank are explosion-proof
9. Ensure that all hand tools to be used are non-sparking
10. Ground all equipment utilized for pumping air, liquid or solid materials to the body of the tank
11. Ensure that each person required to enter the site wears a hardhat, steel toe safety shoes and eye protection
12. Confirm that a combustible gas indicator is present, calibrated and working properly
13. Ensure that the contractor has a sufficient knowledge of the procedures that are to be conducted

DURING OPERATIONS:

1. Continuously monitor the atmosphere in the excavation area
2. Double check to ensure that all ignition sources have been removed before purging/inerting begins
3. All tank exhaust fumes should be vented a minimum of 12" above grade or three (3) feet above adjacent rooflines
4. Plug or cap all holes in the tank after removal except for a single 1/8 inch vent hole
5. Do not allow the tank to be dragged
6. Ensure that tank is blocked to prevent rolling
7. Label the tank immediately upon removal from the excavation
8. A signed **"clean-certificate"** should be provided by the tank cleaner.
9. A **"bill of sale"** between the tank owner and the person who removes the tank from the property should be completed
10. Re-check the tank atmosphere before allowing its removal from the site
11. Ensure that the angle of repose of the excavation is sufficient before personnel are allowed entry
12. Ensure that excavated materials are maintained at least two (2) feet from the sides of the excavation

TANK CLEANING:

1. The tank atmosphere must be checked at the top, middle and bottom immediately before entry
2. The tank cleaner must wear uncontaminated clothing before entering the tank
3. Boots and gloves should be of a material that is impervious to the tank product
4. The tank cleaner should wash and change clothes immediately after exiting the tank
5. Ventilation should be supplied to raise the oxygen levels to at least 16%, to allow entry with a SCBA. Entry without a SCBA is allowed if oxygen level is above 19.5%. Ventilation should be continued, regardless of acceptable test results for flammable vapors, until oil and sludge have been removed. It is very important that the ventilation equipment is grounded
6. Respiratory protection is to consist of a full-face supplied air respirator (SCBA) - canister masks do not provide adequate protection
7. The air-intake for the supplied air respirator must be located upwind of the tank and all internal combustion engines
8. The tank cleaner must have a current respirator fitness test certificate
9. The mask is not to be removed while the individual remains in the tank
10. An entry permit must be signed before a worker is allowed to enter a UST
11. Before entering a tank, the cleaner must put on a safety harness with an attached lifeline
12. The observer must be physically able to remove the tank cleaner or have adequate mechanical means available

ENTRANCE TO A TANK IS PROHIBITED IF ANY OF THE FOLLOWING CONDITIONS EXIST (API 2015):

1. Flammable vapors are greater than 20% of the lower flammable limit
2. Oxygen constitutes less than 16% of the atmosphere
3. Hydrogen sulphide (H_2S) concentrations are above 100 parts per million (ppm)
4. Airborne concentrations of toxic vapors are above levels acceptable to the employer for entry

I HAVE LISTENED TO THE REVIEW OF THE ABOVE SAFETY PLAN AND HAVE READ THE COPY WHICH WAS ISSUED TO ME. I AGREE TO CONFORM TO IT.

1. Name Hugh Ramsey
   Signature X
   Employer
   Date 6-14-95

2. Name Jackie C. Stephens
   Signature
   Employer Blue Ridge Assoc, Inc.
   Date 6-14-95

3. Name
   Signature
   Employer
   Date

4. Name
   Signature
   Employer
   Date

5. Name
   Signature
   Employer
   Date

6. Name
   Signature
   Employer
   Date

7. Name
   Signature
   Employer
   Date

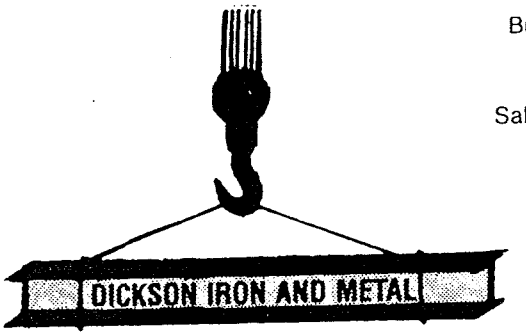
Appendix VII

Dickson Iron and Metal
Purchase Record (receipt for tank)

7260 on
5490
1770

PURCHASE RECORD F 037466
DICKSON IRON AND METAL

N. 907 Dyer Rd.
Spokane. WA 99212
(509) 535-6146



Buyers of Scrap Iron
Copper
Aluminum

Sales: Electric Motors
and Accessories
Structural Steel
Pipe

Date 6/15/95

Purchased From Jane A. Doe

Address

Quant.	Item	Per Lb.	Amount	Quant.	Item	Per Lb.	Amount
1770	Iron	10¢	$85		Motors		
	Cast Iron				Tin		

No

Totals $85

PHOTOGRAPHS

Photograph 1. Commencing tank pull at Freeman High School, Looking southwest

Photograph 2. Breaking 8"-10" concrete with rebar to expose UST

Photograph 3. Continuing to remove thick concrete to expose UST

Photograph 4. 2,000 gallon UST exposed at 16" bgs, looking towards the high school building

Photograph 5. 2,000 gallon UST sitting in water (5' bgs)

Photograph 6. Lifting UST out of pit

Photograph 7. Backhoe removing UST from pit after internal tank cleaning

Photograph 8. External of tank cleaned and then tank loaded onto truck for legal disposal at Dickson Steel

Photograph 9. First Phase excavation continued under concrete slab to east and under dispenser area, conducted by Jackie E. Stephens

Photograph 10. Excavation (removing PCS) deepened to water level at that time, and this first pit soil sampled. Note the soil is a tight clay

Photograph 11. Second Phase (extended excavation) removal of PCS at Freeman High School, conducted by Zane Stephens

Photograph 12. Pit being extended to south...Note water has risen to within 3' of surface

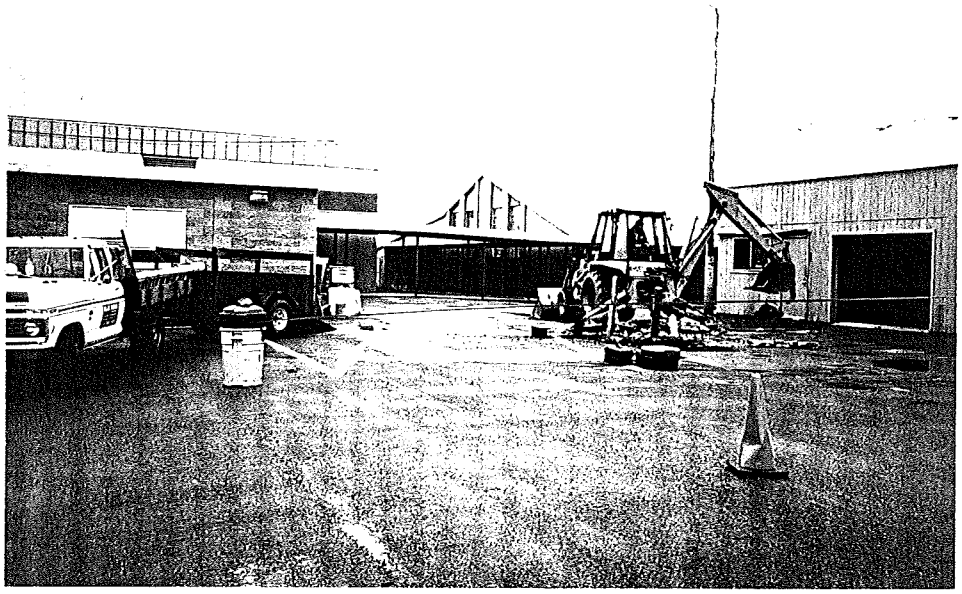
Photograph 13. Northern first pit flooded

Photograph 14. Second Phase excavating stopped as water nears southern extended pit

Photograph 15. PCS temporarily stockpiled to northeast of UST-site, Later removed to regulated landfill

Appendix VIII

Photographs



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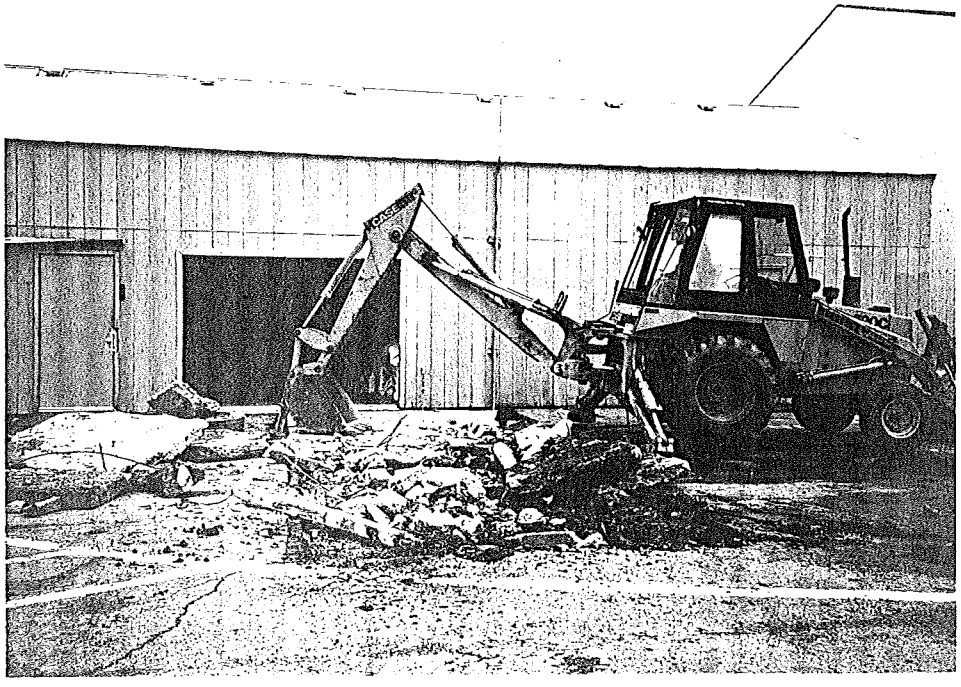
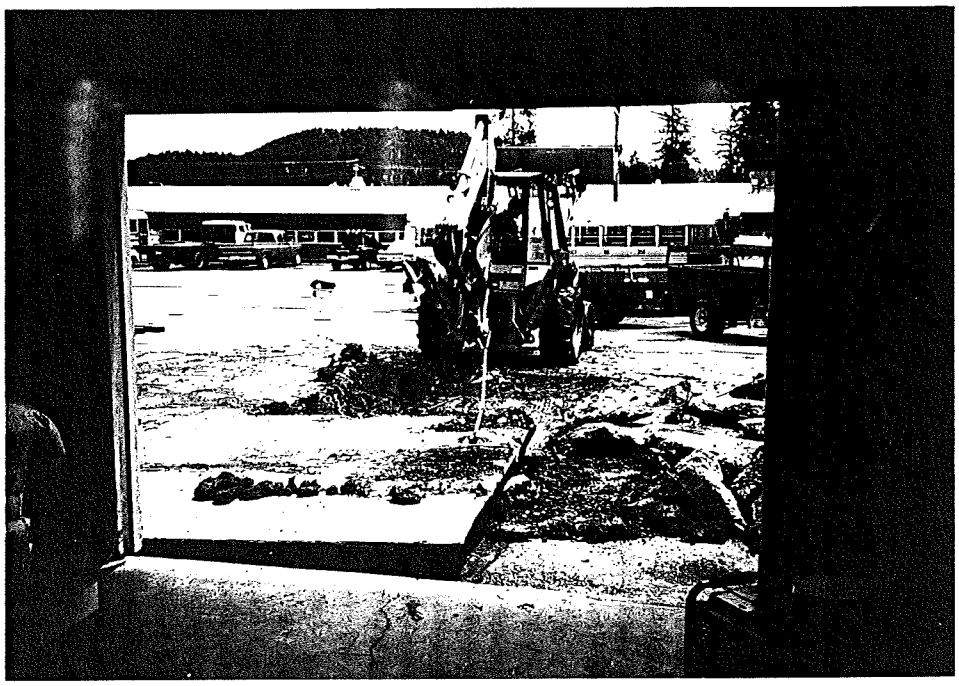


Photograph 2. Breaking 8"-10" concrete with rebar to expose UST



Photograph 3. Continuing to remove thick concrete to expose UST

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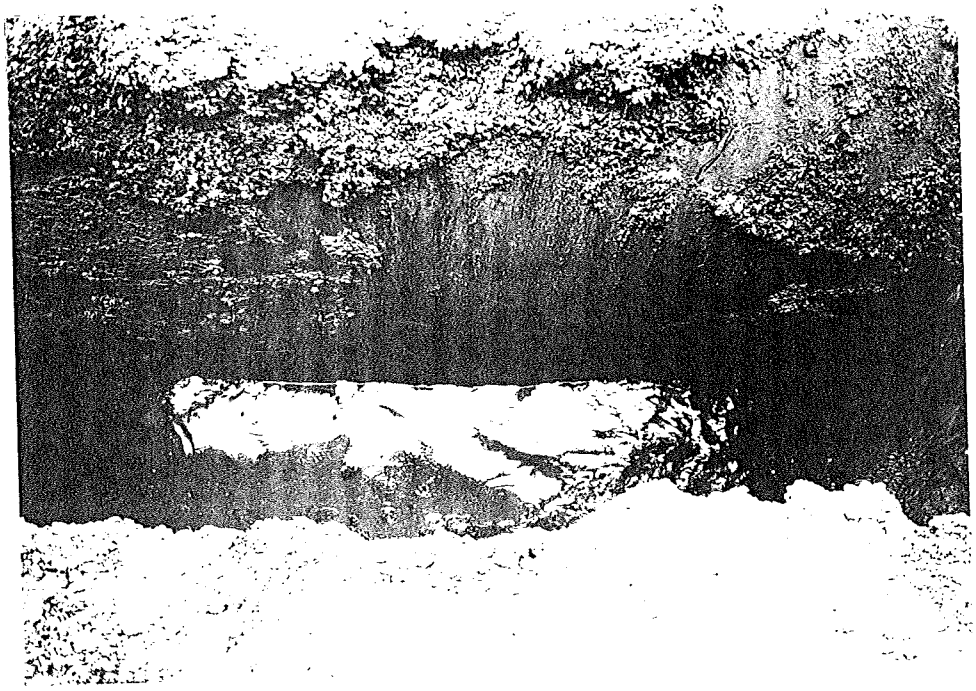
Photograph 5. 2,000 gallon UST sitting in water (5' bgs)



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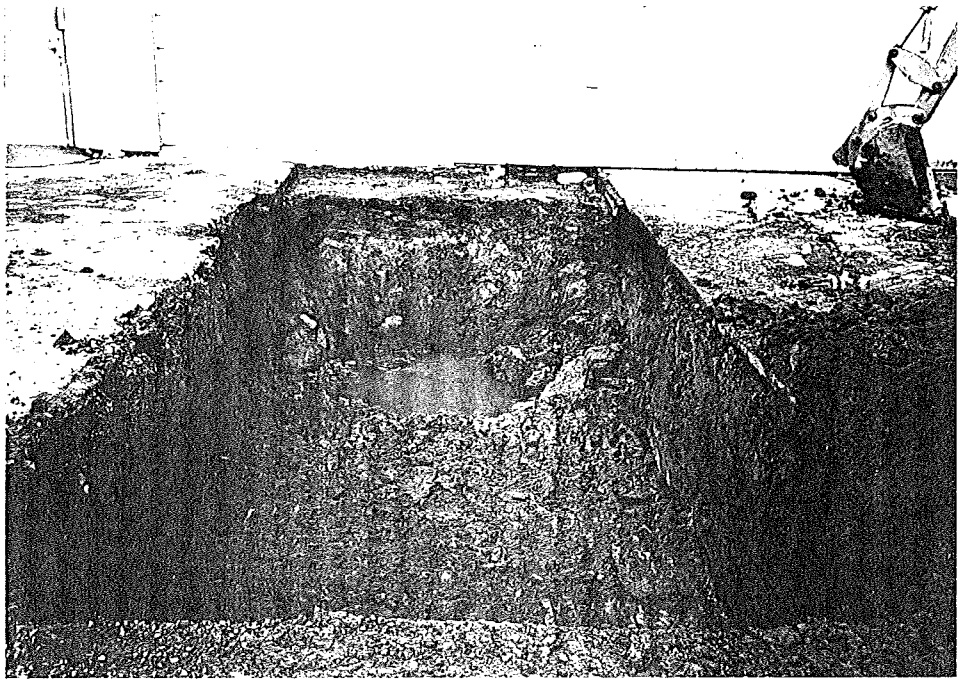

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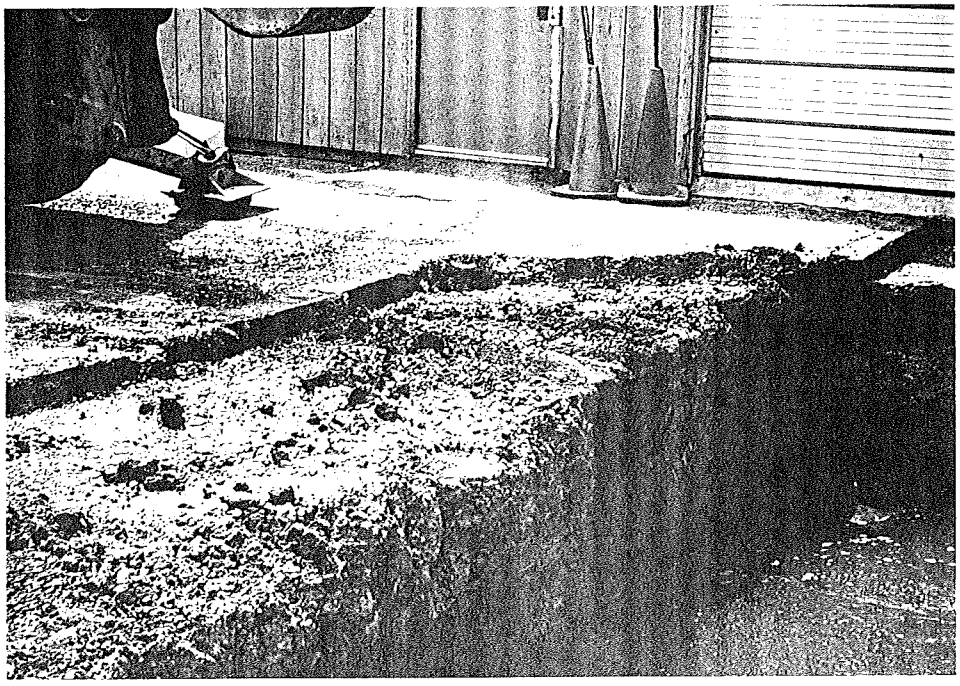

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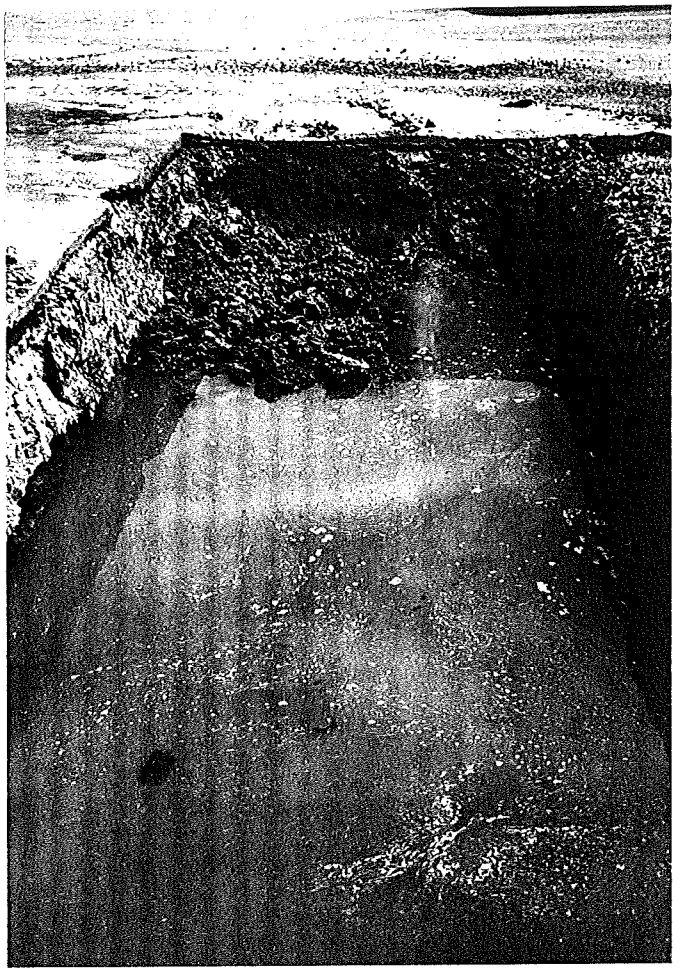

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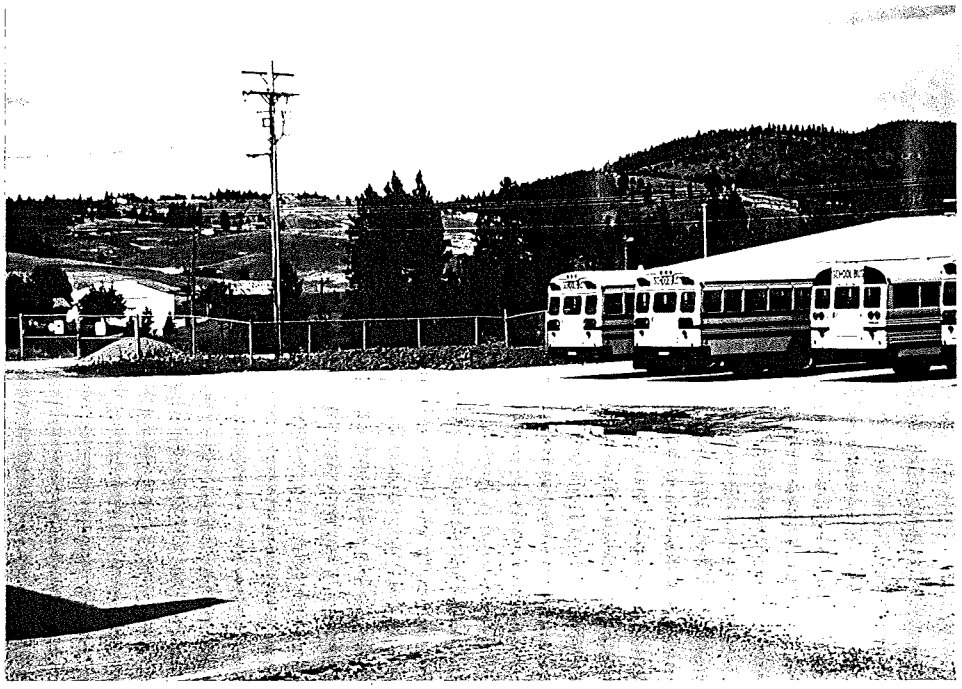

Photograph 15. PCS temporarily stockpiled to northeast of UST-site, Later removed to regulated landfill